

IN THE CLAIMS

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. When strikethrough cannot easily be perceived, or when five or fewer characters are deleted, [[double brackets]] are used to show the deletion. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please record that claims 49 and 50 are pending along with claims 1-31 and 42-59 in the application and CANCEL claims 32-41 and 60-63 without prejudice or disclaimer as follows:

1. (Previously presented) An objective lens, comprising:

a first transmitting portion divergently transmitting an incident beam, wherein the first transmitting portion is at a relatively near-axis region from an optical axis of the objective lens;

a second transmitting portion transmitting the incident beam, wherein the second transmitting portion is arranged facing the first transmitting portion;

a first reflecting portion, comprising a negative power, condensing and reflecting the incident beam from the first transmitting portion, wherein the first reflecting portion is formed around the second transmitting portion; and

a second reflecting portion, comprising a positive power, condensing and reflecting the incident beam from the first reflecting portion towards the second transmitting portion, wherein the second reflecting portion is formed around the first transmitting portion.

2. (Previously presented) The objective lens of claim 1, wherein a ratio of a diameter of the second transmitting portion to an outer diameter of the incident beam on the first reflecting portion is 0.5 or less, reducing side lobe components of a light spot formed through the second transmitting portion.

3. (Previously presented) The objective lens of claim 2, wherein at least one of the first and second reflecting portions further comprise a path difference generating portion generating a separate optical path for at least a portion of the incident beam, reducing the side lobe components of the light spot formed through the second transmitting portion by a difference

in paths of a portion of the incident beam on the path difference generating portion and the remainder of the incident beam.

4. (Original) The objective lens of claim 3, wherein the path difference generating portion projects from the concave curvature of the second reflecting portion.

5. (Previously presented) The objective lens of claim 3, wherein the path difference generating portion recesses into the concave curvature of the second reflecting portion.

6. (Previously presented) The objective lens of claim 3, wherein the path difference generating portion is formed in the first reflecting portion.

7. (Previously presented) The objective lens of claim 1, wherein at least one of the first and second reflecting portions further comprise a path difference generating portion generating a separate optical path for at least a portion of the incident beam, reducing the side lobe components of the light spot formed through the second transmitting portion by a difference in paths of a portion of the incident beam on the path difference generating portion and the remainder of the incident beam.

8. (Previously presented) The objective lens of claim 7, wherein the path difference generating portion projects from the concave curvature of the second reflecting portion.

9. (Previously presented) The objective lens of claim 7, wherein the path difference generating portion recesses into the concave curvature of the second reflecting portion.

10. (Previously presented) The objective lens of claim 7, wherein the path difference generating portion is formed in the first reflecting portion.

11. (Previously presented) The objective lens of claim 1, wherein the first transmitting portion has curvature with a negative power.

12. (Previously presented) The objective lens of claim 1, wherein a maximum angle, α , between the optical axis and an outermost ray of the incident beam passed through the second transmitting portion after passing through the first transmitting portion and reflecting on the first and second reflecting portions, satisfies the following condition in the air

$$\alpha \leq 36^\circ.$$

13. (Previously presented) The objective lens of claim 1, wherein the first transmitting portion has curvature with a negative power.

14. (Previously presented) An optical pickup, comprising:
a light source emitting a laser beam;
an optical path changing unit altering a traveling path of an incident beam;
an objective lens, disposed on an optical path between the optical path changing unit and an optical disk, focusing the incident beam from the light source to form a light spot on the optical disk; and
a photodetector receiving the beam reflected from the optical disk and passed through the objective lens and the optical path changing unit,
wherein the objective lens comprises
a first transmitting portion divergently transmitting an incident beam, wherein the first transmitting portion is at a relatively near-axis region from an optical axis of the objective lens;
a second transmitting portion transmitting the incident beam, wherein the second transmitting portion is arranged facing the first transmitting portion;
a first reflecting portion, comprising a negative power, condensing and reflecting the incident beam from the first transmitting portion, wherein the first reflecting portion is formed around the second transmitting portion; and
a second reflecting portion, comprising a positive power, condensing and reflecting the incident beam from the first reflecting portion towards the second transmitting portion, wherein the second reflecting portion is formed around the first transmitting portion.

15. (Previously presented) The optical pickup of claim 14, wherein a ratio of a diameter of the second transmitting portion to an outer diameter of the incident beam on the first

reflecting portion is 0.5 or less, reducing side lobe components of a light spot formed through the second transmitting portion.

16. (Previously presented) The optical pickup of claim 15, wherein at least one of the first and second reflecting portions further comprise a path difference generating portion generating a separate optical path for at least a portion of the incident beam, reducing the side lobe components of the light spot formed through the second transmitting portion by a difference in paths of a portion of the incident beam on the path difference generating portion and the remainder of the incident beam.

17. (Previously presented) The optical pickup of claim 16, wherein the path difference generating portion projects from the concave curvature of the second reflecting portion.

18. (Previously presented) The optical pickup of claim 16, wherein the path difference generating portion recesses into the concave curvature of the second reflecting portion.

19. (Previously presented) The optical pickup of claim 16, wherein the path difference generating portion is formed in the first reflecting portion.

20. (Previously presented) The optical pickup of claim 14, wherein a maximum angle, α , between the optical axis and an outermost ray of the incident beam passed through the second transmitting portion after passing through the first transmitting portion and reflecting on the first and second reflecting portions, satisfies the following condition in the air

$$\alpha \leq 36^\circ.$$

21. (Previously presented) The optical pickup of claim 20, wherein at least one of the first and second reflecting portions further comprise a path difference generating portion generating a separate optical path for at least a portion of the incident beam, reducing the side lobe components of the light spot formed through the second transmitting portion by a difference

in paths of a portion of the incident beam on the path difference generating portion and the remainder of the incident beam.

22. (Previously presented) The optical pickup of claim 21, wherein the path difference generating portion projects from the concave curvature of the second reflecting portion.

23. (Previously presented) The optical pickup of claim 21, wherein the path difference generating portion recesses into the concave curvature of the second reflecting portion.

24. (Previously presented) The optical pickup of claim 21, wherein the path difference generating portion is formed in the first reflecting portion.

25. (Previously presented) The optical pickup of claim 14, wherein at least one of the first and second reflecting portions further comprise a path difference generating portion generating a separate optical path for at least a portion of the incident beam, reducing the side lobe components of the light spot formed through the second transmitting portion by a difference in paths of a portion of the incident beam on the path difference generating portion and the remainder of the incident beam.

26. (Previously presented) The optical pickup of claim 25, wherein the path difference generating portion projects from the concave curvature of the second reflecting portion.

27. (Previously presented) The optical pickup of claim 25, wherein the path difference generating portion recesses into the concave curvature of the second reflecting portion.

28. (Previously presented) The optical pickup of claim 25, wherein the path difference generating portion is formed in the first reflecting portion.

29. (Previously presented) The optical pickup of claim 14, wherein the first transmitting portion has curvature with a negative power.

30. (Previously presented) The optical pickup of claim 14, further comprising a detecting-correcting unit, on the optical path between the optical path changing unit and the objective lens, performing at least one of detecting the thickness of the optical disk and correcting aberration caused by thickness variations of the optical disk.

31. (Previously presented) The optical pickup of claim 30, wherein the detecting-correcting unit comprises a first lens and a second lens arranged on the optical path, the first lens being closer to the light source than the second lens, wherein the detecting-correcting unit actuates at least one of the first lens and the second lens to perform one of detecting the thickness of the optical disk and correcting aberration caused by thickness variations of the optical disk.

32.-41. (cancelled)

42. (Previously presented) An objective lens, comprising:
a single lens configuration comprising a high numerical aperture to form a high-density, high resolution light spot, a first reflecting portion comprising a negative power, and a second reflecting portion comprising a positive power.

43. (Previously presented) The objective lens of claim 42, wherein the numerical aperture comprises at least 0.8.

44. (Previously presented) The objective lens of claim 42, wherein the single lens configuration comprises a first transmitting portion divergently transmitting an incident beam, wherein the first transmitting portion is at a relative near-axis region from an optical axis of the objective lens.

45. (Previously presented) The objective lens of claim 44, wherein the single lens configuration further comprises a second transmitting portion transmitting the incident beam, wherein the second transmitting portion is arranged facing the first transmitting portion.

46. (Previously presented) The objective lens of claim 45, wherein the first reflecting portion condenses and reflects the incident beam from the first transmitting portion and is formed around the second transmitting portion.

47. (Previously presented) The objective lens of claim 46, wherein the second reflecting portion condenses and reflects the incident beam from the first reflecting portion towards the second transmitting portion and is formed around the second transmitting portion.

48. (Previously presented) An objective lens, comprising:

a single lens configuration shielding a near-axis beam and comprising a numerical aperture of at least 0.8, a first reflecting portion comprising a negative power, and a second reflecting portion comprising a positive power.

49. (Original) The objective lens of claim 48, wherein the single lens configuration comprises a first transmitting portion divergently transmitting an incident beam, wherein the first transmitting portion is at a relative near-axis region from an optical axis of the objective lens.

50. (Original) The objective lens of claim 49, wherein the single lens configuration further comprises a second transmitting portion transmitting the incident beam, wherein the second transmitting portion is arranged facing the first transmitting portion.

51. (Previously presented) The objective lens of claim 50, wherein the first reflecting portion condenses and reflects the incident beam from the first transmitting portion and is formed around the second transmitting portion.

52. (Previously presented) The objective lens of claim 51, wherein the second reflecting portion condenses and reflects the incident beam from the first reflecting portion towards the second transmitting portion and is formed around the second transmitting portion.

53. (Previously presented) An optical pickup, comprising:
an objective lens comprising a single lens configuration, the single lens configuration comprising a high numerical aperture to form a high-density, high resolution light spot, a first reflecting portion comprising a negative power, and a second reflecting portion comprising a positive power.

54. (Previously presented) The optical pickup of claim 53, wherein the numerical aperture comprises at least 0.8.

55. (Previously presented) The optical pickup of claim 53, wherein the single lens configuration comprises a first transmitting portion divergently transmitting an incident beam, wherein the first transmitting portion is at a relative near-axis region from an optical axis of the objective lens.

56. (Previously presented) The optical pickup of claim 55, wherein the single lens configuration further comprises a second transmitting portion transmitting the incident beam, wherein the second transmitting portion is arranged facing the first transmitting portion.

57. (Previously presented) The optical pickup of claim 56, wherein the first reflecting portion condenses and reflects the incident beam from the first transmitting portion and is formed around the second transmitting portion.

58. (Previously presented) The optical pickup of claim 57, wherein the second reflecting portion condenses and reflects the incident beam from the first reflecting portion towards the second transmitting portion and is formed around the second transmitting portion.

59. (Previously presented) An objective lens, comprising:
a first transmitting portion divergently transmitting an incident beam, wherein the first transmitting portion is at a relatively near-axis region from an optical axis of the objective lens;

a second transmitting portion transmitting the incident beam, wherein the second transmitting portion is arranged facing the first transmitting portion;

a first reflecting portion, comprising a negative power, condensing and reflecting the incident beam from the first transmitting portion, wherein the first reflecting portion is formed around the second transmitting portion; and

a second reflecting portion, comprising a positive power, condensing and reflecting the incident beam from the first reflecting portion towards the second transmitting portion, wherein the second reflecting portion is formed around the first transmitting portion,

wherein the objective lens forms a small light spot to reproduce information from an optical disk when a ratio of an outer diameter of the second transmitting portion to an outer diameter of the incident beam on the first reflecting portion is 0.5 or less or, when the outer diameter of the second transmitting portion and the outer diameter of the incident beam on the first reflecting portion satisfy the following condition

$$0.1 < \frac{\text{diameter of second transmitting portion}}{\text{outer diameter of light incident on first reflecting portion}} < 0.3$$

60-63. (cancelled)